

Abstract

Suction valve spring retainers mounted using an access bore plug are described for use in plunger pump housings having an offset access bore and incorporating structural features for stress-relief. These pump housing structural features accommodate access bore plugs that secure suction valve spring retainers that are internally located substantially centrally over the suction bore transition area of the plunger pump housing. Access bore plugs are secured in place on the pump housing using one or more threaded retainers. Plunger pumps so constructed are relatively resistant to fatigue failure because of stress-reducing structural features, and they may incorporate a variety of valve styles, including top and lower stem-guided valves and crow-foot-guided valves, in easily-maintained configurations. Suction valve spring retainers mounted in plunger pump housings may also incorporate a suction valve top stem guide. Further, certain structural features of access bore plugs may be dimensioned to aid in improving volumetric efficiency of the pumps in which they are used.